Application Number 10/521531
Response to the Office Action dated April 1, 2010

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A method for deuteration of an aromatic ring comprising:

reacting the aromatic ring under a neutral condition with a deuterated solvent other than deuterium peroxide (D_2O_2) and supercritical D_2O in the presence of at least one activated catalyst selected from a platinum catalyst, a rhodium catalyst, a ruthenium catalyst, a nickel catalyst and a cobalt catalyst under non-supercritical condition,

wherein the aromatic ring may have at least one substituent and is at least one selected from the group consisting of benzene, naphthalene, anthracene, phenanthrene, 9,10-dihydroanthracene, naphthacene, pentaphene, pentacene, hexaphene, hexacene, heptaphene, heptacene, trinaphthylene, 1,4-dihydronaphthalene, pyrene, triphenylene, biphenylene, indene, indan, indacene, phenalene, fluorene, acenaphthene, acenaphthylene, fluoranthene, tetraphenylene, coranthrene, acephenanthrylene, aceanthrylene, cyclopentaphenanthrene, chrysene, picene, pleiadene, rubicene, pyranthrene, coronene, perylene, rubrene, dibenzophenanthrene, 1,2-dibenzo-1,3-cycloheptadiene and ovalene, and

the at least one activated catalyst is activated with hydrogen gas or heavy hydrogen gas.

2. (Original) The method for deuteration according to claim 1, wherein the catalyst is an activated platinum catalyst.

3. (Original) The method for deuteration according to claim 2, wherein the platinum catalyst is one comprising platinum of 0 to 2 valences.

4. (Original) The method for deuteration according to claim 2, wherein the platinum catalyst is platinum carbon.

5. (Cancelled)

6. (Cancelled)

7. (Previously Presented) The method for deuteration according to claim 1, wherein the at least one substituent of the aromatic ring is selected from the group consisting of a halogen atom, a hydroxyl group, a mercapto group, an oxo group, a thioxo group, a carboxyl group, a sulfo group, a sulfino group, a sulfeno group, a phosphino group, a phosphinoyl group, a formyl group, an amino group, a cyano group and a nitro group.

8. (Previously Presented) The method for deuteration according to claim 1, wherein the at least one substituent of the aromatic ring is selected from the group consisting of an alkyl group, an alkenyl group, an aryl group, an aralkyl group, an alkoxy group, an aryloxy group, an alkylthio group, an arylthio group, an alkylsulfonyl group, an arylsulfonyl group, an alkylsulfinyl group, an arylsulfinyl group, an alkylphosphino group, an arylphosphino group, an alkylphosphinoyl group, an arylphosphinoyl group, an alkylamino group, an arylamino group, an alkoxycarbonyl group, an aryloxycarbonyl group, an alkoxysulfonyl group, an aryloxysulfonyl group, an acyl group and an acyloxy group, which may further have at least one substituent.

9. (Previously Presented) The method for deuteration according to claim 8, wherein the at least one substituent of the aromatic ring has at least one substituent selected from the group consisting of an alkyl group, an alkenyl group, an alkynyl group, an aryl group, a hydroxy group, an alkoxy group, an amino group, an alkylamino group, a mercapto group, an alkylthio group, an formyl group, an acyl group, a carboxyl group, an alkoxycarbonyl group, a carbamoyl group and an alkylcarbamoyl group.

10. (Previously Presented) The method for deuteration according to claim 1, wherein the reaction is carried out at 180 °C or lower.

11. (Previously Presented) The method for deuteration according to claim 1, wherein the deuterated solvent is at least one selected from the group consisting of deuterium oxide, deuterated alcohols, deuterated carboxylic acids, deuterated ketones, deuterated dimethuylsulfoxide, and tritium oxide.